



Figure S6. Median disparities in the near foveal region. **A** The spatial map of natural disparity medians is symmetric about the vertical meridian. Uncrossed disparities occur exclusively at elevations above the horizontal median. Crossed disparities occur exclusively at elevations below the horizontal median. This pattern of disparities can be understood in terms of the typical structure of natural scenes where nearer fixations (yielding crossed disparities) occur most frequently at lower elevations where the ground-plane dominates. **B** Vertical horopter. A vertical slice in A at an azimuth of 0.0° shows a backward pitch with respect to the vertical, consistent with a previously reported property of the empirical vertical horopter known as the Helmholtz shear. The best-fit line is $\delta_{median} = -0.0475e - 0.0028$ where e is retinal elevation. The top-back pitch of the vertical horopter is consistent with multiple psychophysical observations. **C** Horizontal horopter. Median disparities along the horizontal median are more uncrossed at larger azimuths. A horizontal slice in A at an elevation of 0.0° is well fit by the parabola $\delta_{median} = -0.022a^2$ where a is retinal azimuth. The horizontal horopter's deviation from the Vieth Müller circle towards uncrossed disparity is consistent with the Hering-Hillebrand deviation.